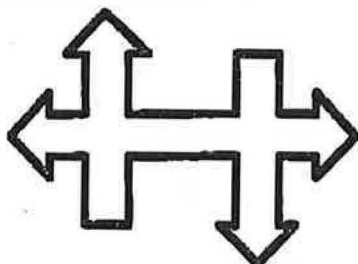


FAX COVER PAGE

To: RANDY KIRKLANDFrom: TOM HUTPhone: 225-4439Date: 4/9/7Total pages: 4

Comments: _____

Combined Health District**"Health In Many Ways"**

OWNER

MAIL AD

OWNER	MAIL AD
Ex. 6 P... Names, Addresses and phone numbers redacted	Ex. 6 P... Names, Addresses and ph...
Ex. 6 - ...	SAME 1928 FL BS
Ex. 6...	SAME
Ex. 6 P....	1 SWACKER CH 6060N 1926 F
Ex. 6 - ...	SAME PAR:
Ex. 6 P... Names, A...	Ex. 6 P... Names, ...
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Ex. 6 - 1...	SAME PA BS
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42 JP MORGAN CHASE BANK	1350 WAKIE WAY SANDIEGO CA 92123 PA BS
Ex. 6 - ...	SAME P
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Ex. 6 P... Names, Addresses and phone num...	VACANT
68 FARMERS & CIT BANK	VACANT LOT

VACANT LOT

18	ARMORE	CITY OF DATTON	VACANT LOT	
17		EPPS, MARION G	PO BOX 26375	45426 P
20		PARKER, JEFFREY	SAME	F
23		ELLIOT, JOHN & DORINE	SAME	F
24		NATIONAIRETS, INC	TENOLA C SMTH PO 2954	45401 F
27		SHEPARD, JACKIE D CHARLES, ANNA JOHNSON	542 SHEEP AV	45417 F
28 30		GRAY, WANDA L	SAME	F
29		FEE, MILDRED G	31 ARMORE	F
34		ZOBER, MARTHA H	635 OSMOND AV	45417 P
35		PERSONS, MARLO	SAME	F
36		GREY, ROBIN R DENNIS, DELLICK CROWDER	SAME	F
37		OWENSBY, JEFFREY L	4522 QUEENS AV	45406 F
40		CUSTOM FREIGHT SALES	VACANT LOT	
45		HUTSON, WILLIE E	700 DENNISON AV	45408 F
49		11	11	
50		TOLLE, STEVEN D	1972 PENNSYLVANIA DR	45385 F
54		FREEMAN, CHERLYN F JOHNSON, GREGORY	1215 EARHAM DR	45406 F
55		HARDY, MAE F	SAME	P
58		HENDERSON, CARRIE B	SAME	P
59		CALLOWAY, DELORES	SAME	F
61		JOHNSON, DALLAS	4034 LARSPUR DR	45406 NON
62		CUSTOM FREIGHT SALES	VACANT LOT	
64		SANDERS, BRIAN L	222 OXFORD	45402 F
67		BROOKS, ALFRED A	419 N ORCHARD AV	45417 F
68		CUSTOM FREIGHT SALES	VACANT LOT	
71		WILLIAMS, DAUNTE LYRON	SAME	F
72		BEERMAN COEP	VACANT LOT	
75		OWENSBY, HELEN	SAME	F
76 78		BROWN, DARRYL	400 N UPLAND	45417 F
79		OWENSBY, SHAWN	SAME	F
81		HAWES, FRANK L & ROSA J	815 W GRAND AV	45402 F
82		WEIGHT, MARCIA R	5851 DUNCREE APT 1320	45426 F
84		HOLLEY, TYRON M	34 PINEHURST AV	45405 F
88		BEERMAN FOUNDATION INC	OTHER COM	
92		BEERMAN FOUNDATION	PK GARAGE	



Public Health
Prevent. Promote. Protect.

**Dayton &
Montgomery
County**

**Reibold Building
117 South Main Street
Dayton, Ohio 45422**

**937-225-4395 Voice
937-496-3070 Fax**

Health Commissioner
James W. Gross, M.P.H.

Medical Director
Thomas Herchline, M.D.

**Director
of Environmental Health**
Mark A. Case, R.S., M.S.A.

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PUBLIC HEALTH NOTICE

TO: Property Owner, or Current Resident

FROM: Public Health – Dayton & Montgomery County

DATE: February 1, 2008

RE: Possible Chemical Exposure

In 2003-2005, Delphi documented elevated levels of volatile organic compounds (VOCs) in groundwater and soil gas in the vicinity of the Delphi facility on Home Avenue in Dayton, Ohio. VOCs readily produce vapors that can travel through the soil and enter your home through cracks or other openings in your basement. As a result of the high levels of VOCs in the groundwater and soil gas, Delphi conducted sub slab and indoor air testing in the basements of several of your neighbors to see if the vapors entered their home. These test results show that, in some cases, the vapor concentrations exceeded the residential screening levels set by the Agency for Toxic Substances and Disease Registry and the Ohio Department of Health. Long term exposure to these vapors above the screening level may cause nerve, kidney and liver damage.

A vapor mitigation system will be installed in those homes which exceed the indoor air screening level to prevent the harmful vapors from entering the home. The mitigation system will be installed with additional follow-up air testing at **no** cost to the homeowner.

As your home lies within the area of concern for possible vapor intrusion, Public Health **STRONGLY RECOMMENDS** that you sign the attached Access Agreement to permit the environmental consultant access to your home to conduct the sub-slab and/or the indoor air testing, and if necessary, the installation of a vapor mitigation system. Once again, there is **no** cost to the homeowner. Please call 1-866-4-DELPHI (1-866-433-5744) to arrange air testing.

If you have **any** questions regarding this public health notice, please call Thomas Hut at Public Health - Dayton & Montgomery County at 225-4439.



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117 South Main Street
Dayton, Ohio 45422

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Dayton & Montgomery County

April 14, 2008

Mr. Steve Renninger
US EPA
919 North Keowee Street
Dayton, Ohio 45404

Re: Delphi Corporation vapor intrusion investigation
Dayton, Ohio
properties at 38 Bish, 54 South Ardmore and 118 South Ardmore

Dear Mr. Renninger:

This letter will serve as follow-up to a discussion about the above properties that occurred during the February 21, 2008 US EPA – Delphi Corporation telephone conference call.

Recall that signed access agreements may have been provided by some of the owners of these properties. However, during the February 21st call Haley & Aldrich advised that these properties would not be sampled because they are unoccupied, appear to be unsecured, are unsafe to enter and are uninhabitable.

According to the City of Dayton, each of the three properties has been placed into the City of Dayton's Building Services Nuisance Abatement program and is the subject of an order issued requiring the rehab or demolition of the property.

Based on this information as well as our discussion with representatives from the city, Public Health concurs with the recommendation that these homes not be tested until and unless they are rehabilitated. I spoke with representatives from the City of Dayton and advised that I will be forwarding information to this effect to be placed in the files of the respective properties.

If you have any questions, please call me at 225-4429.

Respectfully,

Mark A. Case, Director
Division of Environmental Health
cc: Sue Hoertt, Haley & Aldrich



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117 South Main Street
Dayton, Ohio 45422

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Dayton & Montgomery County

May 12, 2008

Mr. Steve Renninger
US EPA
919 North Keowee Street
Dayton, Ohio 45404

Re: Delphi / Dayton vapor intrusion investigation
Properties at 48 Bish & 67, 82, 84/86 & 122 South Ardmore

Dear Mr. Renninger:

This letter will serve as follow-up to discussions regarding the above properties that occurred during recent US EPA – Delphi Corporation telephone conference calls.

Haley & Aldrich has proposed that these properties not be sampled because they are unoccupied, appear to be unsecured, are unsafe to enter and are uninhabitable. Public Health concurrence has been requested.

According to the City of Dayton, these properties are in the City of Dayton's Building Services Nuisance Abatement program and are the subject of an order requiring rehab or demolition. We understand that at least two of the properties (84 / 86 and 122 South Ardmore) will be demolished this year.

Based on this information, Public Health concurs with the recommendation that these homes not be tested until and unless they are rehabilitated.

We understand that Haley & Aldrich has proposed gaining access to the property at 48 Bish to obtain a single vapor sample, collected sub slab in an effort to better define the extent of contamination in this area. We support this proposal. However, we believe broader sampling to determine indoor air quality is not warranted for the reasons noted earlier in this letter.

If you have any questions, please call me at 225-4429.

Respectfully,

Mark A. Case, Director
Division of Environmental Health

cc: Sue Hoertt, Haley & Aldrich



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May 21, 2008

Mr. Wilbur Heflin, Chairperson
Southwest Priority Board
101 W. Third Street
Dayton, Ohio 45402

Dear Chairperson Heflin:

This letter is in response to the community health concerns generated by the U.S. EPA Time-Critical Removal Action activities taking place at the Delphi Home Avenue VOC Plume Site. Public Health - Dayton & Montgomery County (PHDMC) and the Ohio Department of Health (ODH) Health Assessment Section (HAS) became involved with the U.S. EPA effort beginning in March 2007. The mission of PHDMC is to lead and innovate by working with our community to achieve the goals of public health; prevention, promotion, and protection. ODH HAS is a cooperative agreement partner with the Agency for Toxic Substances and Disease Registry (ATSDR), a federal public health agency under the CDC umbrella. The mission of ODH HAS is to protect the public health of the people of Ohio through prevention or reduction of exposures to hazardous substances from waste disposal sites, unplanned releases, or other sources of toxic pollution in Ohio's environment.

Our agencies are working collectively to respond to the community's concerns and are planning to present information and respond to questions and concerns at a meeting with the Southwest Priority Board later this summer. Some of this information will not be available until then, resulting in our request to change our meeting date.

In your letter dated April 10, 2008 you expressed concerns and requested a written response. The following are the responses to your questions/concerns:

1. How does this long-term exposure affect our health today?

The health effects likely from exposures to low-levels of the chemicals detected at the Delphi Home Ave. site are largely unknown. Long-term exposures to the chemicals of concern found at the Delphi Home Ave. site may lead to an increased risk of developing cancer. To be conservative and protective of public health, the risk for developing cancer assumes a person is exposed to a chemical 24 hours per day, 350 days per year, over a period of 30 years.

The purpose of the U.S. EPA investigation is to determine if the vapors from the contamination are impacting the sub-slab (the space under the

basement or concrete slab) and the indoor air of area homes and to determine if the levels pose a public health threat.

The spilled chemicals near the Delphi Home Ave. site may have been impacting the neighborhood for a long period of time. However, there is no data available for public health officials to evaluate and determine if levels in the past may have posed a health threat.

Currently, based on the low-levels of chemicals that have been found in the basements of the homes near the Delphi Home Ave. site during the recent sampling by Delphi and the U.S. EPA, these exposures are not expected to cause non-cancer health effects.

2. Where can the residents in the affected area (or the public) go to get medical monitoring if they suspect health problems?

If a resident in the Delphi Home Ave. community believes they have a health problem or a medical condition, they should discuss their health problems with their family doctor or a qualified medical professional so he/she can properly diagnose and treat their illness. If someone does not have a primary care physician, an appointment to see a physician may be made at the Charles R. Drew Health Center or the Good Samaritan Hospital Medical Residents Clinic. Information on these providers is available by calling the offices of Public Health -- Dayton & Montgomery County.

It is important to note that the Ohio Department of Health (ODH) and the Agency for Toxic Substances and Disease Registry (ATSDR) does not recommend "medical monitoring" for exposure to low levels of TCE, PCE and chloroform at the Delphi Home Ave. site. Since these chemicals quickly break down and are not stored by the body, only recent high-dose exposures would likely result in detection. These tests are not helpful detecting low-levels of these chemicals in your body and the data provided from U.S. EPA's sampling indicate only low-level detections of these chemicals in a limited number of area homes. The results of these tests simply indicate recent exposure to these chemicals and cannot be used to predict future adverse health impacts that may or may not result from exposures. It is also important to note that these tests are not routinely available at your doctor's office and medical insurance may not pay for these tests.

3. What can these residents expect in the future?

As of May 2008, twenty seven (27) homes have been tested, seven (7) have vapor abatement systems installed or to be installed and seven (7) locations have been identified for further investigation with quarterly monitoring. Fourteen (14) homes have been sampled and require no further action. There are eight (8) homes in the area where there has been unsuccessful attempts to contact the homeowners and eight (8) more homes that are uninhabitable and subject to City of Dayton housing department enforcement orders.

At the request of the community during a November 14, 2007 public meeting, HAS staff requested the ODH Chronic Disease and Behavioral Epidemiology Section conduct a community cancer assessment for the Delphi Home Avenue neighborhood. PHDMC supported this request and provided population statistics for Delphi-area census tracts needed for the study.

HAS also requested our ATSDR colleagues address the community request for a health study, also supported by PHDMC. We hope to have the results of the community cancer assessment available in August, 2008 and we hope to have the ODH Chronic Disease and Behavioral Epidemiology Section and the ATSDR both available to answer questions and concerns at a community meeting (meeting date and time to be determined) at that time.

4. If the monitoring does not control the vapor, what are their options to keep their families (and our community) safe?

The purpose of a vapor abatement system is to remove the chemicals from under the homes and keep them from entering the indoor air. After the systems are installed, there are a series of tests conducted to see if the system is performing properly. Homes are tested at 30 days, 60 days, 180 days, and annually thereafter. If at any time the sampling detects chemicals at levels above the established ATSDR screening values, adjustment to the system will be made until the levels are below the established values.

The homes that have been put on a quarterly monitoring schedule will be considered clean/safe when four consecutive quarters of indoor air results are below the recommended indoor air screening levels. The homes that tested below the screening value levels require no further action.

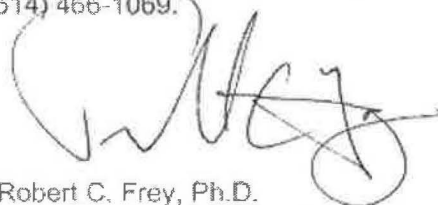
In addition to treating individual homes, the source of contamination is currently being addressed by Delphi. We believe that eliminating the source of contamination, such as contaminated soils, soil-gas and groundwater is the best long-term solution to vapor intrusion problems. To accomplish this, Delphi installed a Soil Vapor Extraction (SVE) system on the Delphi Home Ave. property to capture soil-gas before it migrates off their property and under the adjacent residential neighborhood. The SVE system removes chemical vapors through four extraction wells that are spaced around the contaminated area. The Ohio EPA oversees the operation of the SVE system and they track performance by reviewing monthly performance reports. Operation of the SVE system over the next several years should continue to reduce on-site and off-site soil vapor levels, which could eventually eliminate the need for residential mitigation systems. In the meantime, potential off-site exposures by the vapor intrusion pathway are being controlled by the vapor abatement systems installed in the individual residents' homes.

Thank you for your inquiry and your involvement in the community surrounding Delphi Home Avenue site. We hope this response adequately addresses your concerns. If you have any questions, please contact Mark A. Case at 225-4429 or Dr. Bob Frey (614) 466-1069.

Sincerely,



Mark A. Case, M.S., R.S.,
Director, Division of Environmental Health



Robert C. Frey, Ph.D.
Chief, Health Assessment Section
Bureau of Environmental Health
Ohio Department of Health

Attachments

cc: Steve Renninger, U.S. EPA OSC
Ken Marcellus

Delphi VOC Plume Site Public Meeting Agenda

August 20, 2008

6:00 - 8:30 p.m.

Ellison Senior Citizen Center

2412 West Third Street, Dayton, OH 45417



- **Welcome/Introductions:** Southwest Priority Board: Wilbur Heflin, Chair (5 min)



- **PHDMC involvement/activities:** PHDMC: Mark Case, Director of Environmental Health (15 min)



- **Status of the Removal Action:** U.S. EPA and Ohio EPA: Steve Renninger, USEPA ER OSC (15 min)



- **Public Health Consultation:** Ohio Department of Health (ODH), Health Assessment Section (HAS): Bob Frey, Chief HAS (15 min)



- **Health Studies:** Agency for Toxic Substances and Disease Registry (ATSDR), Division of Health Studies: Robin Lee, Team Lead-Research Activities (30 min)



- **Community Cancer Assessment:** ODH, Chronic Disease and Behavioral Epidemiology Section: Holly Engelhardt, Epidemiologist (30 min)

- **Question & Answer** (40 min)

Points of Contact:

- ❖ Mark Case, PHDMC Director of Environmental Health (937) 225-4443 mcase@phdmc.org
- ❖ Steve Renninger, U.S. EPA Emergency Response Section (513) 569-7539 renninger.steven@epamail.epa.gov
- ❖ Bob Frey, Chief, ODH HAS (Health Consultations) (614) 466-1390 bob.frey@odh.ohio.gov
- ❖ Robin Lee, ATSDR Division of Health Studies (770) 488-3811 rl5@CDC.GOV
- ❖ Holly Engelhardt, ODH Chronic Disease and Behavioral Epidemiology Section (Community Cancer Assessment) (614) 466-5365 holly.engelhardt@odh.ohio.gov
- ❖ Ken Marcellus, Coordinator, Southwest Priority Board (937) 333-7381 Ken.Marcellus@cityofdayton.org

*** Media inquiries for the following agencies should be directed to the noted offices / phone numbers:**

ATSDR – Office of Communications: (770) 488-0700

Ohio Department of Health – Office of Public Affairs: (614) 644-8562

Public Health – Dayton & Montgomery County

Mark Case	225-4429
Tom Hut	225-4439

Welcome to your meeting!

- Past meetings have focused on removal & mitigation
- Tonight's meeting is in response to concerns voiced by your Priority Board and individual residents
 - health effects
 - medical monitoring
 - what can residents expect in the future
- Emphasis tonight will be on health issues
- Federal – ATSDR & USEPA
- State – ODH HAS & Chronic Disease / Behavioral Epi
- Local – Public Health & Priority Board

What is Public Health's Role?

- Local contact for questions & information
- Participant on the EPA Delphi team
- Assisted with property access
 - mailed notices & orders
 - canvassed neighborhoods
- Conducted special inspections to troubleshoot problem situations

What is Public Health's Role?

- Homeowner meetings
- Supported HAS request for cancer investigation
 - proposed cancer study area to ODH
 - provided population – based statistics to ODH
- Outreach to medical community
 - “Lunch & Learn” with local physicians by ATSDR
 - potential for more training
- Office of the Health Commissioner & Board of Health



Project Summary – Delphi VOC Site

Number of Structures Sampled	32 of 45
Number of Structures Requiring Mitigation	7 of 32
Mitigation Locations Completed -	7 of 7
Number of Structures Requiring Quarterly Monitoring	7 of 32
Quarterly Monitoring Locations Completed -	4 of 7
No Further Action Locations (via sampling)	23 of 32

<http://www.epaosc.net/delphivocsite>



Delphi VOC Plume Site Dayton, OH - EPA Region V



Site Contact:
Steven Renninger
On-Scene Coordinator
renninger.steven@epa.gov

www.epaosc.net/delphivocsite
2701 Home Avenue
Dayton, OH

[site map](#) | [area map](#) | [bookmark](#)

Reports
Photos
News Links
ODH fact Sheets

On March 5, 2007, the Ohio EPA requested assistance from U.S. EPA Region V to investigate potential vapor intrusion from historic spills (from underground storage tanks containing TCE, PCE, and Chloroform) originating from the Delphi facility on Home Avenue, Dayton, OH. In 2003-2005, Delphi documented elevated levels of TCE, PCE, and Chloroform in groundwater and soil gas. Residential areas are located north and south of the former tank areas.

See Documents Section of this website and select the ODH Vapor Intrusion Fact Sheet for details on vapor intrusion.

On May 31, 2007, U.S. EPA, ODH, City of Dayton, Ohio EPA, and Delphi conducted a public meeting to discuss the initiation of a vapor intrusion investigation.



Superfund Division Emergency Response Branch

**Delphi VOC Site
August 20, 2008**



**Bureau of
Environmental Health
Health Assessment Section**

"To protect and improve the health of all Ohioans"

Public Meeting

Delphi VOC Plume Site Dayton, Ohio

August 20, 2008

Delphi VOC Plume Site: Background

- In 2003-2005, Delphi documented elevated levels of TCE, PCE and chloroform in the groundwater and soil-gas on-site while investigating old spills from underground storage tanks located in the northeastern part of the Delphi Home Avenue plant (2701 Home Avenue Home Ave. Dayton).
- In 2005-2006, Delphi installed off-site soil-gas probes along South Ardmore, Bish and Cowart Avenues and documented PCE levels as high as 180,000 parts per billion (ppb), TCE levels as high as 7,700 ppb, chloroform levels as high as 11,000 ppb and 1,1,1-TCA levels as high as 179,000 ppb.
- In 2006, Delphi installed an on-site Soil Vapor Extraction (SVE) system to clean the contaminated soils and capture vapors.
- In March 2007, the Ohio EPA requested assistance from U.S. EPA. Multi-agency meetings took place between the Ohio EPA, U.S. EPA, Public Health of Dayton Montgomery County (PHDMC) and the Ohio Department of Health - Health Assessment Section (ODH HAS) to discuss the possibility of vapor intrusion impacting the community living next to the Delphi facility.
- On May 31, 2007, the U.S. EPA sponsored a public meeting at the Westwood Recreation Center in Dayton. During this first community meeting, U.S. EPA presented a description of the site, its history, the site contamination, Ohio EPA's involvement and the current clean-up efforts. U.S. EPA also recruited residents to sign access agreements that allow U.S. EPA to sample their property sub-slab (the space under a basement or concrete slab) and the indoor air in their homes.
- From May 2007 through July, 2007, Delphi and U.S. EPA collected sub-slab and indoor air samples at 15 residences.
- On October 3, 2007, the Delphi team participated in one-on-one meetings with residents who had their homes (sub-slab and indoor air) sampled by the U.S. EPA. Representatives from U.S. EPA, Delphi, PHDMC and ODH HAS met with 10 residents living adjacent to the plant.
- On November 14, 2007, the U.S. EPA sponsored a second public meeting at the Westwood Recreation Center to provide residents with an update on results of the on-going U.S. EPA-Delphi Time-Critical Removal Action, addressing vapor intrusion issues in the neighborhood

To learn more about the Delphi VOC Plume site, visit the U.S. EPA Site Profile web page at:
www.epaosc.net/site_profile.asp?site_id=3078

ODH Involvement:

At the May 31, 2007 U.S. EPA public meeting, ODH HAS informed the community we would be producing a public Health Consultation (HC) to address the health concerns. In July-August 2008, HAS produced a public health consultation for the Delphi VOC Plume site.

The role of HAS at the August 20, 2008 public meeting is to discuss the results, conclusions and recommendations of the ODH HAS public health consultation for the Delphi Home Ave. site in west Dayton, Ohio.

ODH-ATSDR Cooperative Agreement:

In 1990, the ODH HAS entered into a cooperative agreement with the ATSDR, a U.S. Public Health Service Agency under the Centers for Disease Control (CDC) umbrella. The goal of this federal-state public health partnership is to serve the public by using the best environmental science to provide accurate health information and take public health actions to prevent harmful exposures and disease related to toxic substances.

What is a public Health Consultation (HC)?

A public health consultation is the review of environmental data to determine if the health of communities who live or work in the area could be harmed by the exposure to toxic chemicals. The HC involves finding out if chemicals have moved off-site and into surrounding areas where people might be exposed to chemicals found in the air, water or soils. ODH HAS produces HC documents at sites when regulatory agencies and/or communities express concerns that public health may be impacted by exposures to hazardous chemical spills or releases.

Important Notes: A HC does not look at medical records and patient charts. A HC does not count community disease or illness. In other words, a HC is not the same thing as a medical exam or a community health study. If you are experiencing health problems, you should always talk with your family doctor first.

What a HC includes (numbers 4 & 5 are found on next page):

The main steps of a HC include:

1. Identify the site chemicals of concern and their concentration (what are the levels found).
2. Determine the extent of contamination (where is the contamination found).
3. Determine the presence of or absence of a completed exposure pathway (to learn more about a completed exposure pathway, see "*Exposure to Chemicals*" on the ODH HAS Web page, select "*Health Assessment Section Fact Sheets*" and then clicking on "*Exposure to Chemicals*" fact sheet).

(over)

What a HC includes (continued):

4. Classify the health hazard of a site (Urgent Public Health Hazard; Public Health Hazard; Potential Public Health Hazard; Indeterminate Public Health Hazard; No Public Health Hazard).
5. Make recommendations to the regulatory agencies including: restricting the use of or replacing water supplies; requesting additional sampling or specific sampling methods; restricting site access; installing equipment to remove/reduce contamination; or carrying out a community health study.

What are the Delphi VOC Plume Site public health consultation conclusions and recommendations?

Notes: The following conclusions & recommendations are re-worded for space and reading ease.

Delphi VOC Plume Site:

Conclusions:

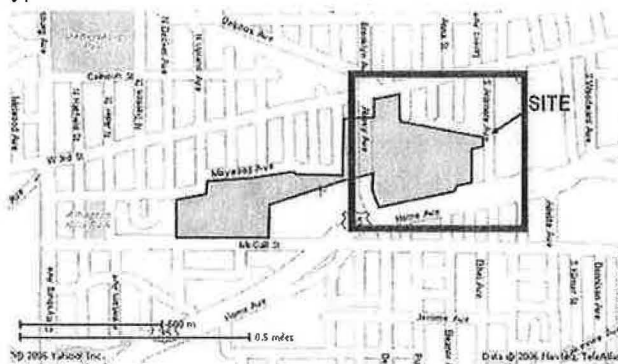
1. Exposure to contamination from vapor intrusion posed an **Indeterminate Public Health Hazard** in the past. There is no indoor air data available that show nearby residents were breathing contaminants in the air and there are no soil-gas data that show contaminants were at levels in the soils that could pose a vapor intrusion hazard.
2. Based on May 2007 through July 2007 sampling data, exposure to contamination from vapor intrusion posed a **Public Health Hazard** at that time. Indoor air data, collected by the U.S. EPA and Delphi, indicated that seven (7) nearby residents had TCE in indoor air at levels that may pose a long-term health threat. **Note:** *These seven residences had in-home vapor mitigation systems installed. Currently the TCE under these homes poses no risk to residents due to operations of these systems.*
3. The Delphi VOC Plume site poses a **potential or indeterminate public health hazard** for community exposures to contamination from vapor intrusion in the future to residents whose homes have not been tested and do not have sub-slab vapor abatement systems. **Note:** The individual household vapor abatement systems are intended to be a temporary solution to prevent vapor-phase contaminants from entering nearby structures. The long-term solution is to identify and remove the source of the groundwater contamination underlying the community. The soil vapor extraction system (SVE), fully operational since July 2007, is already having an impact on reducing soil-gas levels of the chemicals of concern in the residential area.

Recommendations:

1. U.S. EPA should continue to take interim measures at affected properties to disrupt the vapor intrusion pathway into homes and buildings and conduct follow-up sampling to determine if the systems are reducing levels to below HAS/ATSDR screening levels.
2. Delphi should continue to operate the on-site SVE system until sampling indicates levels of chemicals on-site no longer are a viable source of off-site contamination.

To view the public Health Consultation:

To view a copy of the Delphi VOC Plume Site HC, visit the ODH web site at: www.odh.ohio.gov, select "ODH Programs" from the left side menu, select "Health Assessment Section" from the list of programs, and click the "submit" button. Then choose "Public Health Consultations" and select the "Delphi VOC Plume Site" hyperlink.



For more information:

For health-related questions and information about the public health consultations, contact the Ohio Department of Health.



Ohio Department of Health
Bureau of Environmental Health
Health Assessment Section
246 N. High Street
Columbus, Ohio 43215
Phone: (614) 466-1390

For information about the Delphi Home Ave. site contamination and cleanup activities, visit the U.S. EPA Emergency Response Section webpage at:
www.epaossc.net/site_profile.asp?site_id=3078



U.S. EPA Superfund B-2
Emergency Response Section
26 W. Martin Luther King
Cincinnati, Ohio 45268
Project Coordinator: Steve Renninger
(513) 569-7539
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**Bureau of
Environmental Health
Health Assessment Section**

"To protect and improve the health of all Ohioans"

Exposure to Toxic Chemicals

Answers to Frequently Asked Health Questions

How are we exposed to chemicals?

We come in contact with many different chemicals every day that are non-toxic and normally do not cause health problems. But any chemical could become toxic if a person comes in contact with high enough doses. For example: Aspirin will cure a headache but too much aspirin becomes toxic and can cause serious health problems. You can get sick from contact with chemicals but getting sick will depend on the following:

- How much you were exposed to (dose).
- How long you were exposed (duration).
- How often you were exposed (frequency).
- General Health, Age, Lifestyle
Young children, the elderly and people with chronic (on-going) health problems are more at risk to chemical exposures.

Other factors that increase health risks are:

- Current health status (if you are ill or healthy).
- Lifestyle, age, and weight.
- Smoking, drinking alcohol, or taking certain medicines or drugs.
- Allergies to certain chemicals.
- Past chemical exposure.
- Working in an industry/factory that makes or uses chemicals.

What is a completed exposure pathway?

Chemicals must have a way to get into a person's body to cause health problems. This process of those chemicals getting into our bodies is called an exposure pathway. A completed exposure pathway includes all of the following 5 links between a chemical source and the people who are exposed to that chemical.

- (1) A Source of the chemical (where the chemical came from);
- (2) Environmental Transport (the way the chemical moves from the source to the public. This can take place through the soil, air, underground drinking water or surface water);
- (3) Point of Exposure (the place where there is physical contact with the chemical. This could be on-site as well as off-site);
- (4) A Route of Exposure (how people came into the physical contact with the chemical. This can take place by drinking, eating, breathing or touching it);
- (5) People Who Could be Exposed (people that live near a facility who are most likely to come into physical contact with the site-related chemical).

What are exposure routes?

There are three ways (routes) a person can come in contact with toxic chemicals. They include:

- Breathing (inhalation).
- Eating and drinking (ingestion).
- Skin contact (dermal contact).

Inhalation (breathing)

Chemicals can enter our body through the air we breathe. These chemicals can come in the form of dust, mist, or fumes. Some chemicals may stay in the lungs and damage lung cells. Other chemicals may pass through lung tissue, enter the bloodstream, and affect other parts of our body.

Ingestion (eating or drinking)

The body can absorb chemicals in the stomach from the foods we eat or the liquids we drink. Chemicals may also be in the dust or soil we swallow. These chemicals can enter our blood and affect other parts of our body.

Dermal (skin) Contact

Chemicals can enter our body through our skin. We can come in contact with water polluted by chemicals or touch polluted soil. Some chemicals pass through our skin and enter our bloodstream, affecting other parts of our body.

For more information contact:

Ohio Department of Health
Health Assessment Section
246 North High Street, 5th Floor
Columbus OH 43215
Phone: 614-466-1390
Fax: 614-644-4556



ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

The Ohio Department of Health is in cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), Public Health Service, U.S. Department of Health and Human Services.

This pamphlet was created by the Ohio Department of Health, Health Assessment Section and supported in whole by funds from the Comprehensive Environmental Response, Compensation and Liability Act trust fund.

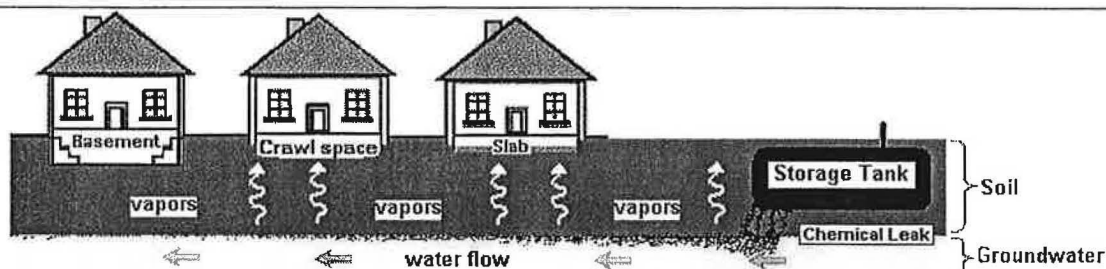


**Bureau of
Environmental Health
Health Assessment Section**

"To protect and improve the health of all Ohioans"

Vapor Intrusion

Answers to Frequently Asked Health Questions



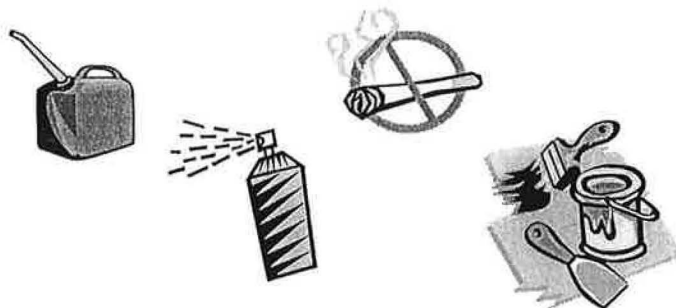
What is vapor intrusion?

Vapor intrusion refers to the vapors produced by a chemical spill/leak that make their way into indoor air. When chemicals are spilled on the ground or leak from an underground storage tank, they will seep into the soils and will sometimes make their way into the groundwater (underground drinking water). There are a group of chemicals called volatile organic compounds (VOCs) that easily produce vapors. These vapors can travel through soils, especially if the soils are sandy and loose or have a lot of cracks (fissures). These vapors can then enter a home through cracks in the foundation or into a basement with a dirt floor or concrete slab.

VOCs and vapors:

VOCs can be found in petroleum products such as gasoline or diesel fuels, in solvents used for industrial cleaning and are also used in dry cleaning. If there is a large spill or leak resulting in soil or groundwater contamination, vapor intrusion may be possible and should be considered a potential public health concern that may require further investigation.

Although large spills or leaks are a public health concern, other sources of VOCs are found in everyday household products and are a more common source of poor indoor air quality. Common products such as paint, paint strippers and thinners, hobby supplies (glues), solvents, stored fuels (gasoline or home heating fuel), aerosol sprays, new carpeting or furniture, cigarette smoke, moth balls, air fresheners and dry-cleaned clothing all contain VOCs.



Can you get sick from vapor intrusion?

You can get sick from breathing harmful chemical vapors. But getting sick will depend on:

How much you were exposed to (dose).

How long you were exposed (duration).

How often you were exposed (frequency).

How toxic the spill/leak chemicals are.

General Health, age, lifestyle: Young children, the elderly and people with chronic (on-going) health problems are more at risk to chemical exposures.

VOC vapors at high levels can cause a strong petroleum or solvent odor and some persons may experience eye and respiratory irritation, headache and/or nausea (upset stomach). These symptoms are usually temporary and go away when the person is moved to fresh air.

Lower levels of vapors may go unnoticed and a person may feel no health effects. A few individual VOCs are known carcinogens (cause cancer). Health officials are concerned with low-level chemical exposures that happen over many years and may raise a person's lifetime risk for developing cancer.

How is vapor intrusion investigated?

In most cases, collecting soil gas or groundwater samples near the spill site is done first to see if there is on-site contamination. If soil vapors or groundwater contamination are detected at a spill site, environmental protection and public health officials may then ask that soil vapor samples be taken from areas outside the immediate spill site and near any potential affected business or home. The Ohio Department of Health (ODH) does not usually recommend indoor air sampling for vapor intrusion before the on-site contamination is determined.

(continued on next page)

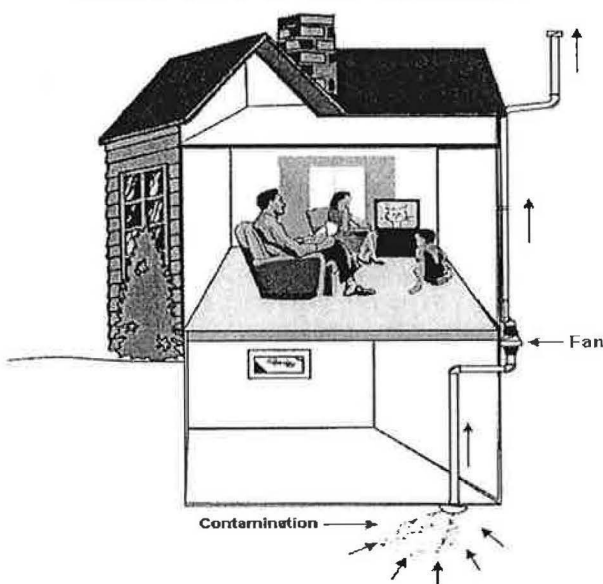
How is vapor intrusion investigated? (continued)

Because a variety of VOC sources are present in most homes, testing will not necessarily confirm VOCs in the indoor air are from VOC contamination in soils at nearby spill site. But if additional sampling is recommended, samples may be taken from beneath the home's foundation (called sub-slab samples), to see if vapors have reached the home. Sub-slab samples are more reliable than indoor air samples and are not as affected by other indoor chemical sources. If there was a need for additional sampling on a private property, homeowners would be contacted by the cleanup contractor or others working on the cleanup site and their cooperation and consent would be requested before any testing/sampling would be done.

What happens if a vapor intrusion problem is found?

If vapor intrusion is having an effect on the air in your home, the most common solution is to install a *radon mitigation system*. A radon mitigation system will prevent gases in the soil from entering the home. A low amount of suction is applied below the foundation and the vapors are vented to the outside. The system uses minimal electricity and should not noticeably affect heating and cooling efficiency. This mitigation system also prevents radon from entering the home, an added health benefit. Usually, the party responsible for cleaning up the contamination is also responsible for paying for the installation of this system. Once the contamination is cleaned up, the system should no longer be needed. In homes with on going radon problems, ODH suggests these systems remain in place permanently.

Radon Mitigation System



What can you do to improve your indoor air quality?

As stated before, the most likely source of VOCs in indoor air comes from the common items that are found in most homes. The following helpful hints will help improve air quality inside your home:

- ❖ Do not buy more chemicals than you need and know what products contain VOCs.
- ❖ If you have a garage or an out building such as a shed, place the properly stored VOC-containing chemicals outside and away from your family living areas.
- ❖ Immediately clean and ventilate any VOC spill area.
- ❖ If you smoke, go outside and/or open the windows to ventilate the second-hand, VOC-containing smoke outdoors.
- ❖ Make sure all your major appliances and fireplace(s) are in good condition and not leaking harmful VOC vapors. Fix all appliance and fireplace leaks promptly, as well as other leaks that cause moisture problems that encourage mold growth.
- ❖ Most VOCs are a fire hazard. Make sure these chemicals are stored in appropriate containers and in a well-ventilated location and away from an open pilot light (flame) of a gas water heater or furnace.
- ❖ Fresh air will help prevent both build up of chemical vapors in the air and mold growth. Occasionally open the windows and doors and ventilate.
- ❖ Test your home for radon and install a radon detector.

References:

Wisconsin Department of Health and Family Services, Environmental Health Resources, Vapor Intrusion, electronic, 2004.



New York State Department of Health, Center for Environmental Health, April 2003.



Ohio Department of Health, Bureau of Environmental Health, Indoor Environment Program, 2004.

For more information contact:

Ohio Department of Health
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**Bureau of
Environmental Health
Health Assessment Section**

"To protect and improve the health of all Ohioans"

Trichloroethylene (TCE)

(try- klor'oh eth'uh- leen)

Answers to Frequently Asked Health Questions

What is TCE?

TCE is man-made chemical that is not found naturally in the environment. TCE is a non-flammable (does not burn), colorless liquid with a somewhat sweet odor and has a sweet, "burning" taste. It is mainly used as a cleaner to remove grease from metal parts. TCE can also be found in glues, paint removers, typewriter correction fluids and spot removers.

The biggest source of TCE in the environment comes from evaporation (changing from a liquid into a vapor/gas) when industries use TCE to remove grease from metals. But TCE also enters the air when we use common household products that contain TCE. It can also enter the soil and water as the result of spills or improper disposal.

What happens to TCE in the environment?

- TCE will quickly evaporate from the surface waters of rivers, lakes, streams, creeks and puddles.
- If TCE is spilled on the ground, some of it will evaporate and some of it may leak down into the ground. When it rains, TCE can sink through the soils and into the ground (underground drinking) water.
- When TCE is in an oxygen-poor environment and with time, it will break down into different chemicals such as 1,2 Dichloroethene and Vinyl Chloride.
- TCE does not build up in plants and animals.
- The TCE found in foods is believed to come from TCE contaminated water used in food processing or from food processing equipment cleaned with TCE.

How does TCE get into your body?

- TCE can get into your body by breathing (inhalation) air that is polluted with TCE vapors. The vapors can be produced from the manufacturing of TCE, from TCE polluted water evaporating in the shower or by using household products such as spot removers and typewriter correction fluid.
- TCE can get into your body by drinking (ingestion) TCE polluted water.
- Small amounts of TCE can get into your body through skin (dermal) contact. This can take place when using TCE as a cleaner to remove grease from metal parts or by contact with TCE polluted soils.

Can TCE make you sick?

Yes, you can get sick from TCE. But getting sick will depend on the following:

- How much you were exposed to (dose).
- How long you were exposed (duration).
- How often you were exposed (frequency).
- General Health, Age, Lifestyle Young children, the elderly and people with chronic (on-going) health problems are more at risk to chemical exposures.

How does TCE affect your health?

Breathing (Inhalation):

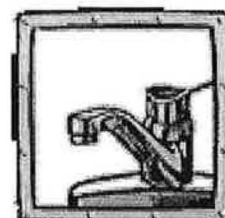
- Breathing high levels of TCE may cause headaches, lung irritation, dizziness, poor coordination (clumsy) and difficulty concentrating.
- Breathing very high levels of TCE for long periods may cause nerve, kidney and liver damage.

Drinking (Ingestion):

- Drinking high concentrations of TCE in the water for long periods may cause liver and kidney damage, harm immune system functions and damage fetal development in pregnant women (although the extent of some of these effects is not yet clear).
- It is uncertain whether drinking low levels of TCE will lead to adverse health effects.

Skin (Dermal) Contact:

- Short periods of skin contact with high levels of TCE may cause skin rashes.



Does TCE cause cancer?

The National Toxicology Program's 11th Report on Carcinogens places chemicals into one of two cancer-causing categories: *Known to be Human Carcinogens* and *Reasonably Anticipated to be Human Carcinogens*.

The 11th Report on Carcinogens states TCE is "*Reasonably Anticipated to be Human Carcinogen*."

The category "*Reasonably Anticipated to be Human Carcinogen*" gathers evidence mainly from animal studies. There may be limited human studies or there may be no human or animal study evidence to support carcinogenicity; but the agent, substance or mixture belongs to a well-defined class of substances that are known to be carcinogenic.

There are human studies of communities that were exposed to high levels of TCE in drinking water and they have found evidence of increased leukemia's. But the residents of these communities were also exposed to other solvents and may have had other risk factors associated with this type of cancer.

Animal lab studies in mice and rats have suggested that high levels of TCE may cause liver, lung, kidney and blood (lymphoma) cancers.

As part of the National Exposure Subregistry, the Agency for Toxic Substances and Disease Registry (ATSDR) compiled data on 4,280 residents of three states (Michigan, Illinois, and Indiana) who had environmental exposure to TCE. ATSDR found no definitive evidence for an excess of cancers from these TCE exposures.

The U.S. EPA is currently reviewing the carcinogenicity of TCE.

Is there a medical test to show whether you have been exposed to TCE?

If you have recently been exposed to TCE, it can be detected in your breath, blood, or urine. The breath test, if done soon after exposure, can tell if you have been exposed to even a small amount of TCE.

Exposure to larger amounts is measured in blood and urine tests. These tests detect TCE and many of its breakdown products for up to a week after exposure. However, exposure to other similar chemicals can produce the same breakdown products in the blood and urine so the detection of the breakdown products is not absolute proof of exposure to TCE.

These tests aren't available at most doctors' offices, but can be done at special laboratories that have the right equipment. **Note:** Tests can determine if you have been exposed to TCE but cannot predict if you will experience adverse health effects from the exposure.

Has the federal government made recommendations to protect human health?

The federal government develops regulations and recommendations to protect public health and these regulations can be enforced by law.

Recommendations and regulations are periodically updated as more information becomes available. Some regulations and recommendations for TCE follow:

- The Environmental Protection Agency (EPA) has set a maximum contaminant level for TCE in drinking water at 0.005 milligrams per liter (0.005 mg/L) or 5 parts of TCE per billion parts water (5 ppb).
- The Occupational Safety and Health Administration (OSHA) have set an exposure limit of 100 ppm (or 100 parts of TCE per million parts of air) for an 8-hour workday, 40-hour workweek.
- The EPA has developed regulations for the handling and disposal of TCE.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological profile for TCE (electronic at <http://www.atsdr.cdc.gov/tfacts19.html>)

Report on Carcinogens, Eleventh Edition; U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program, 2005 (2005 electronic at <http://ntp.niehs.nih.gov/ntp/roc/toc11.html>)

The Ohio Department of Health is in cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), Public Health Service, U.S. Department of Health and Human Services.

This pamphlet was created by the Ohio Department of Health, Bureau of Environmental Health, Health Assessment Section and supported in whole by funds from the Cooperative Agreement Program grant from the ATSDR.





**Bureau of
Environmental Health
Health Assessment Section**

"To protect and improve the health of all Ohioans"

Tetrachloroethylene (PCE)

Other names for tetrachloroethylene include PCE, perchloroethylene, PERC or tetrachloroethene.

What is PCE?

Tetrachloroethylene (also known as PCE, PERC or perchloroethylene) is a man-made chemical that is widely used for dry cleaning clothes and degreasing metal. It is also used to make other chemicals and can be found in some household products such as water repellents, silicone lubricants, spot removers, adhesives and wood cleaners. It easily evaporates (turn from a liquid to a gas) into the air and has a sharp, sweet odor. PCE is a nonflammable (does not burn) liquid at room temperature.

How does PCE get into the environment?

PCE can evaporate into the air during dry cleaning operations and during industrial use. It can also evaporate into the air if it is not properly stored or was spilled. If it was spilled or leaked on the ground, it may find its way into groundwater (underground drinking water).

People can be exposed to PCE from the environment from household products, from dry cleaning products and from their occupation (work). Common environmental levels of PCE (called



background levels) can be found in the air we breathe, in the water we drink and in the food we eat. In general, levels in the air are higher in the cities or around industrial areas where it is used more than rural or remote areas.

The people with the greatest chance of exposure to PCE are those who work with it. According to estimates from a survey conducted by the National Institute for Occupational Safety and Health (NIOSH), more than 650,000 U.S. workers may be exposed. However, the air close to dry cleaning business and industrial sites may have levels of PCE higher than background levels. If the dry cleaning business or industry has spilled or leaked PCE on the ground, there may also be contaminated groundwater as well.

What happens to PCE in the environment?

Much of the PCE that gets into surface waters or soil evaporates into the air. However, some of the PCE may make its way to the groundwater.

Microorganisms can break down some of the PCE in soil or underground water.

In the air, it is broken down by sunlight into other chemicals or brought back to the

soil and water by rain. PCE does not appear to collect in fish or other animals that live in water.



How can PCE enter and leave my body?

PCE can enter your body when you breathe contaminated air or when you drink water or eat food contaminated with the chemical. If PCE is trapped against your skin, a small amount of it can pass through into your body. Very little PCE in the air can pass through your skin into your body. Breathing contaminated air and drinking water are the two most likely ways people will be exposed to PCE. How much enters your body depends on how much of the chemical is in the air, how fast and deeply you are breathing, how long you are exposed to it or how much of the chemical you eat or drink.

Most PCE leaves your body from your lungs when you breathe out. This is true whether you take in the chemical by breathing, drinking, eating, or touching it. A small amount is changed by your body (in your liver) into other chemicals that are removed from your body in urine. Most of the changed PCE leaves your body in a few days. Some of it that you take in is found in your blood and other tissues, especially body fat. Part of the PCE that is stored in fat may stay in your body for several days or weeks before it is eliminated.

Can PCE make you sick?

Yes, you can get sick from contact with PCE. But getting sick will depend upon:

- How much you were exposed to (dose).
- How long you were exposed (duration).
- How often you were exposed (frequency).
- General Health, Age, Lifestyle Young children, the elderly and people with chronic (on-going) health problems are more at risk to chemical exposures.

How can PCE affect my health?

Exposure to very high concentrations of PCE (particularly in closed, poorly ventilated areas) can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness and even death. Skin irritation may result from repeated or extended contact with it as well. These symptoms occur almost entirely in work (or hobby) environments when people have been accidentally exposed to high concentrations or have intentionally used PCE to get a "high." Normal background levels (or common environmental levels) will not cause these health affects.

Does PCE cause cancer (carcinogen)?

In the United States, the National Toxicology Program (NTP) releases the *Report on Carcinogens* (RoC) every two years. The *Report on Carcinogens* (RoC) identifies two groups of agents: "Known to be human carcinogens" & "Reasonably anticipated to be human carcinogens."

PCE has been shown to cause liver tumors in mice and kidney tumors in male rats. There is limited evidence for the carcinogenicity of PCE in humans. PCE has been studied by observing laundry and dry-cleaning workers, who may also have been exposed to other solvents, especially trichloroethylene (TCE), but also petroleum solvents.

The *Eleventh Report on Carcinogens* (RoC) has determined that PCE may reasonably be anticipated to be a carcinogen.

Reference:

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological Profile for tetrachloroethylene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service

Report on Carcinogens, Eleventh Edition; U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program, 2006. <http://ntp.niehs.nih.gov/ntp/roc/toc11.html>

Revised 08-21-06

Is there a medical test to show whether you have been exposed to PCE?

One way of testing for PCE exposure is to measure the amount of the chemical in the breath, much the same way breath-alcohol measurements are used to determine the amount of alcohol in the blood. Because PCE is stored in the body's fat and slowly released into the bloodstream, it can be detected in the breath for weeks following a heavy exposure. Also, PCE and trichloroacetic acid (TCA), a breakdown product of PCE, can be detected in the blood. These tests are relatively simple to perform but are not available at most doctors' offices and must be done at special laboratories that have the right equipment. Because exposure to other chemicals can produce the same breakdown products in the urine and blood, the tests for breakdown products cannot determine if you have been exposed to PCE or the other chemicals that produce the same breakdown chemicals.

What has the federal government made recommendations to protect human health?

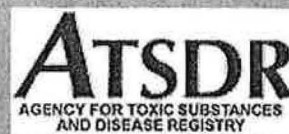
The EPA maximum contaminant level for the amount of PCE that can be in drinking water is 0.005 milligrams PCE per liter of water (0.005 mg/L).

The Occupational Safety and Health Administration (OSHA) have set a limit of 100 ppm for an 8-hour workday over a 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) recommends that PCE be handled as a potential carcinogen and recommends that levels in workplace air should be as low as possible.

The Ohio Department of Health is in cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), Public Health Service, U.S. Department of Health and Human Services.

This pamphlet was created by the Ohio Department of Health, Bureau of Environmental Health, Health Assessment Section and supported in whole by funds from the Cooperative Agreement Program grant from the ATSDR.





**Bureau of
Environmental Health
Health Assessment Section**

"To protect and improve the health of all Ohioans"

1,1,1-Trichloroethane (1,1,1-TCA)

Answers to Frequently Asked Health Questions

What is 1,1,1-TCA?

1,1,1-TCA, also called methyl chloroform, is a man-made chemical that you will not find naturally in the environment. It is a colorless liquid with a sweet, sharp odor. 1,1,1-TCA dissolves very little in water and quickly evaporates (turns into a gas) when exposed to the air. 1,1,1-TCA burns easily when it comes in contact with a spark or flame.

Note: After January 1, 2002, no 1,1,1-TCA is to be manufactured for use in the U.S. because it may affect the earth's ozone layer.

How was 1,1,1-TCA used?

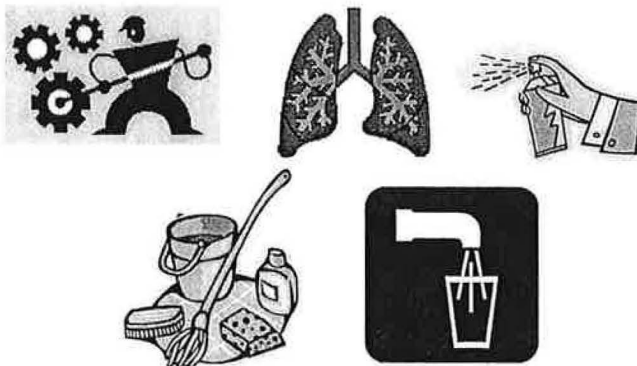
1,1,1-TCA was mainly used as a degreaser in industry, removing oil and grease from metal parts. It was also used as a solvent to dissolve other substances such as glues and paints. 1,1,1-TCA also had many common household uses as well. In the home, it was found in common products such as spot removers, cleaners, glues and aerosol sprays.

Where do you find 1,1,1-TCA in the environment?

1,1,1-TCA can be found in soil, water and air. Because it evaporates easily, it is most commonly found in the air. 1,1,1-TCA will also evaporate quickly from water and soil. It does not bind (stick) to soils, so it may easily leak into the under ground water (groundwater). Many cities in Ohio use groundwater as their drinking water supply. 1,1,1-TCA does not appear to build up in plants, animals or fish.

What happens to 1,1,1-TCA in the environment?

Most of the 1,1,1-TCA released into the environment enters the air. Once in the air, it can travel to the upper part of the earth's atmosphere, called the stratosphere (also called the ozone layer). There, sunlight breaks it down into other chemicals that may reduce the Earth's protective ozone layer.



How are you exposed to 1,1,1-TCA?

1,1,1-TCA can quickly enter your body if you breathe contaminated air (inhalation) and/or drink and eat contaminated food or water (ingestion). Very small amounts can be absorbed by skin contact (dermal).

1,1,1-TCA has been found in air samples taken from all over the world. However, normally you are not exposed to large enough amounts to cause health problems. Because 1,1,1-TCA was used so frequently in home and office products, much higher levels were found in the air inside the home or office than in the outdoor air.

If 1,1,1-TCA is released to surface and ground-water, individuals may be exposed through contaminated drinking water.

Occupational exposure to 1,1,1-TCA can occur during the use of metal degreasing agents, paints, glues, and cleaning products.

Regardless of how 1,1,1-TCA enters your body, nearly all of it quickly leaves your body in the air you exhale. The small amount that is not breathed out can be changed in your body into other substances, known as metabolites. Most of the metabolites leave your body in the urine and breath within a few days.

Can you get sick from 1,1,1-TCA?

Yes, you can get sick. But getting sick will depend on the contact (exposure) you had with the chemical.

Exposure:

- How much you were exposed to (dose).
- How long you were exposed (duration).
- How often you were exposed (frequency).
- General Health, Age, Lifestyle Young children, the elderly and people with chronic (on-going) health problems are more at risk to chemical exposures.

What are some of the health problems caused by 1,1,1-TCA?

If you breathe high levels of 1,1,1-TCA for a short time, you may become dizzy, lightheaded and possibly lose your balance and coordination. These health effects quickly end when you stop breathing the contaminated air. If you breathe much higher levels of 1,1,1-TCA, you may become unconscious, your blood pressure may lower to dangerously low levels and your heart may stop beating.

We do not know if breathing low levels of 1,1,1-TCA for a long time causes harmful effects. Animals studies (mice and rats) show that breathing very high levels of 1,1,1-TCA damages the breathing passages, causes mild effects in the liver and affects the nervous system. There are no human studies that show that eating food or drinking water contaminated with 1,1,1-TCA could harm health.

The likelihood is very low that exposure to 1,1,1-TCA levels found near most hazardous waste sites would cause significant health effects.

Does 1,1,1-TCA cause cancer?

The EPA has classified 1,1,1-TCA as a Group D chemical, not classifiable as to human carcinogenicity. The Group D classification is based on no reported human data and inadequate animal data to suggest that exposure to this chemical can cause cancer.

The International Agency for Research on Cancer (IARC) has also determined that exposure to 1,1,1-TCA has not resulted in cancer in humans.

Is there a test to show whether you have been exposed to 1,1,1-TCA?

Samples of your breath, blood and urine can be tested to determine if you have recently been exposed to 1,1,1-TCA. To be of any value, samples of your breath or blood have to be taken within hours after the exposure and the urine samples have to be taken within 2 days after exposure.

In some cases, these tests can estimate how much 1,1,1-TCA has entered your body. However, these tests will not tell you whether your health will be affected by the exposure to 1,1,1-TCA.

These tests are not routinely done in your doctor's office, hospital and/or clinics because they require special lab equipment.



What has been done to protect human health?

The U.S. Environmental Protection Agency (U.S. EPA) has established a "maximum contaminant level" (MCL) for chemicals in water. If chemicals are found to be above the MCL, your water supplier must take steps to reduce the amount of chemicals so it falls below the level established by the EPA. **Note:** The MCL for 1,1,1-TCA is 200 parts per billion (ppb). In other words: 200 parts of 1,1,1-TCA per one billion parts of water.

After January 1, 2002, no 1,1,1-TCA is to be manufactured for use in the U.S. because it may affect the earth's ozone layer.

References:

Agency for Toxic Substances and Disease Registry (ATSDR). *Toxicological Profile for 1,1,1-Trichloroethane. (Update)*. U.S. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. July, 2006

U.S. Environmental Protection Agency. *Consumer Factsheet on: 1,1,1-Trichloroethane. Groundwater & Drinking Water*. November 2006.

U.S. Environmental Protection Agency. *Methyl chloroform (1,1,1-Trichloroethane) 71-55-6*. Technology Transfer Network Air Toxics Website. Rev. January 2000.

Where can I get more information?

Ohio Department of Health
Bureau of Environmental Health
Health Assessment Section
246 N. High Street
Columbus, Ohio 43215
Phone: (614) 466-1390
Fax: (614) 466-4556



The Ohio Department of Health is in cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), Public Health Service, U.S. Department of Health and Human Services.

This pamphlet was created by the Ohio Department of Health, Bureau of Environmental Health, Health Assessment Section and supported in whole by funds from the Comprehensive Environmental Response, Compensation and Liability Act trust fund.

ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY





**Bureau of
Environmental Health
Health Assessment Section**

"To protect and improve the health of all Ohioans"

Chloroform

Answers to Frequently Asked Health Questions

What is chloroform?

Chloroform, also called trichloromethane or methyltrichloride, is a colorless liquid with a pleasant, non-irritating odor and a slightly sweet taste. As a volatile organic compound (VOC), chloroform easily vaporizes (turns into a gas) in the air. Chloroform does not easily burn, but it will burn when it reaches very high temperatures. Chloroform was one of the first inhaled anesthetics to be used during surgery, but it is not used as an anesthesia today.

Where do you find chloroform?

In order to destroy the harmful bacteria found in our drinking water and waste waters, the chemical chlorine is added to these water sources. As a by-product of adding chlorine to our drinking and waste waters, small amounts of chloroform are formed. So small amounts of chloroform are likely to be found almost everywhere.

In industry, nearly all the chloroform made in the U.S. is used to make other chemicals. From the factories that make or use this chemical, chloroform can enter the air directly or it can enter the air from the evaporation (changing from liquid to a gas) of chloroform-contaminated waters and soils. Chloroform can also enter the water and soils from industry storage and waste sites spills and leaks.

Not only does chloroform evaporate very quickly when exposed to air, it also dissolves easily in water and does not stick to the soils very well. This means chloroform can easily travel through the soils to groundwater, where it can enter a water supply. Chloroform lasts a long time in both the air and in groundwater. Most of the chloroform in the air eventually breaks down, but it is a slow process. Chloroform does not appear to build up in great amounts in plants and animals, but we may find some small amounts of chloroform in foods.

How do you come in contact with chloroform? Who is more at risk?

You are most likely to be exposed to chloroform by drinking contaminated water and/or by breathing contaminated indoor or outdoor air. Chloroform is found in nearly all public drinking water supplies. Chloroform is also found in the air from all areas of the United States. You are probably exposed to small amounts of chloroform in your drinking water and/or in beverages that are made using water that contains chloroform.

People who are at greater risk to be exposed to chloroform at higher-than-normal levels are people who work at or near chemical plants and factories that make or use chloroform. Higher exposures might occur in workers at drinking water treatment plants, waste water treatment plants, and paper and pulp mills. People who operate waste-burning equipment may also be exposed to higher than normal levels. People who swim a lot in swimming pools may also be exposed to higher levels.

How does chloroform enter and leave your body?

- Chloroform can enter your body if you breathe contaminated air (inhalation)
- Chloroform can enter your body if you eat/drink contaminated food or water (ingestion)
- Chloroform can also enter your body through the skin (dermal).



If you take a bath, shower or swim in a pool with chloroform-contaminated water, it can enter your body through inhalation and dermal contact.

Studies in humans and animals show that after you breathe contaminated air or eat contaminated food, the chloroform can quickly enter your bloodstream from your lungs and intestines. Inside your body, chloroform is carried by the blood to all parts of your body, such as the liver, kidneys and fat cells.

Some of the chloroform that enters your body leaves unchanged in the air you breathe out and some of it is broken down into other chemicals. These chemicals are known as breakdown products or metabolites, and some of them can attach to other chemicals inside the cells of your body and may cause harmful effects if they collect in high enough amounts in your body. Some of the metabolites will leave the body in the air you breathe out and small amounts of the breakdown products leave the body in the urine and stool.

How does chloroform affect health?

In humans, large amounts of chloroform can affect the central nervous system (brain), liver and kidneys. Breathing high levels for a short time can cause fatigue, dizziness, and headache. If you breathe air, eat food, or drink water containing elevated levels of chloroform, over a long period, the chloroform may damage your liver and kidneys. Large amounts of chloroform can cause sores (lesions) when the chloroform touches your skin.

Lab studies have shown chloroform caused reproductive problems in animals (mice and rats). However, there is no evidence that show whether chloroform causes harmful reproductive effects or birth defects in humans.

Does chloroform cause cancer?

Based on animal studies, the Department of Health and Human Services (DHHS) has determined that chloroform may reasonably be anticipated to be a carcinogen (a substance that causes cancer). The International Agency for Research on Cancer (IARC) has determined that chloroform is possibly carcinogenic to humans (2B). The EPA has also determined that chloroform is a "probable" human carcinogen.

Results of studies of people who drank chlorinated water showed a possible link between the chloroform in the chlorinated water and the occurrence of cancer of the colon and urinary bladder. Rats and mice that ate food or drank water that had large amounts of chloroform in it for a long period of time developed cancer of the liver and kidneys. However, there is no evidence that shows whether chloroform causes liver and kidney cancer in humans.

Is there a medical test to show whether you have been exposed to chloroform?

Although we can measure the amount of chloroform in the air you breathe out and in blood, urine, and body tissues, we have no reliable test to determine how much chloroform you have been exposed to or whether you will experience any harmful health effects.

The measurement of chloroform in body fluids and tissues may help to determine if you have come into contact with large amounts of chloroform. However, these tests are useful only a short time after you are exposed to chloroform because it leaves the body quickly.

What has been done to protect human health?

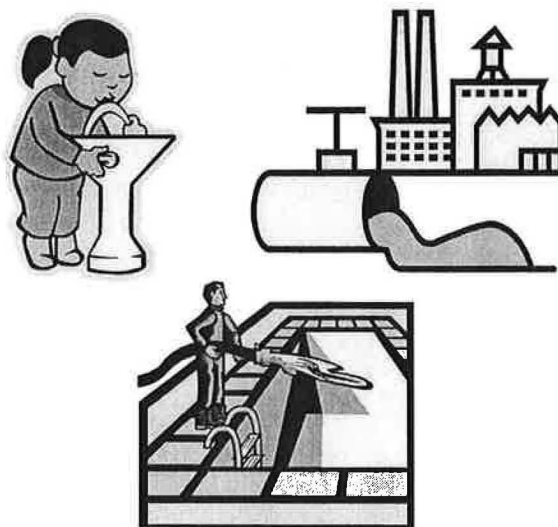
The amount of chloroform normally expected to be in the air ranges from 0.02 to 0.05 parts of chloroform per billion parts (ppb) of air and from 2 to 44 ppb in treated drinking water.

Notes: The below unit of measurement will be found in the ppb (parts per billion) range. Examples: One part per billion (1 ppb) would be equal to having one bean in a pile of one billion beans, or one ppb would be equal to one second of time in 32 years.

The Environmental Protection Agency (EPA) has set the level of chloroform in drinking water at 80 ppb.

The Occupational Safety and Health Administration (OSHA) has set a permissible 50,000 ppb exposure limit of air in the workplace during an 8-hour workday, 40-hour week.

The EPA requires chloroform spills or accidental releases into the environment of 10 pounds or more of be reported to the EPA.



For more information contact:

Ohio Department of Health
Bureau of Environmental Health
Health Assessment Section
246 N. High Street
Columbus, Ohio 43215
Phone: (614) 466-1390
Fax: (614) 466-4556

Reference:

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological profile for chloroform. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

The Ohio Department of Health is in cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), Public Health Service, U.S. Department of Health and Human Services.

This pamphlet was created by the Ohio Department of Health, Bureau of Environmental Health, Health Assessment Section and supported in whole by funds from the Comprehensive Environmental Response, Compensation and Liability Act trust fund.



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Community Health Concerns

Scientific Tools	<p>Used can help us learn about exposure and health effects</p> <ul style="list-style-type: none"> ○ Each tool has two sets of requirements (not presented here); if the requirements are not met, it is unlikely that we can answer our questions
Health statistics review	<p>A comparison of a community's health to state, regional, or national health data</p> <ul style="list-style-type: none"> ○ What it can tell us <ul style="list-style-type: none"> ▪ Describes the health status of the community ▪ Helps determine whether a health study is needed ○ What it does not tell us <ul style="list-style-type: none"> ▪ Whether a health effect is caused by exposure ▪ Whether exposure is associated with the health effect ▪ Whether a person will develop a health effect in the future
Health study	<p>A comparison of person-specific health data from the exposed community to similar people in a non-exposed community</p> <ul style="list-style-type: none"> ○ What it can tell us <ul style="list-style-type: none"> ▪ Describes the health status of the entire community ▪ If there is an association between exposure and a specific health effect ○ What it does not tell us <ul style="list-style-type: none"> ▪ Whether a health effect is caused by the exposure ▪ Whether a person will develop a health effect in the future
Surveillance	<p>Ongoing, systematic collection of health data, monitors how often a specific health effect occurs over time</p> <ul style="list-style-type: none"> ○ What it can tell us <ul style="list-style-type: none"> ▪ Describes the change over time in the number of people who have a health effect ○ What it does not tell us <ul style="list-style-type: none"> ▪ Whether the health effect is caused by exposure ▪ Whether exposure is associated with the health effect ▪ Whether a person will develop the health effect in the future
Exposure registry	<p>A database of exposed people that is updated over time, a tool for researchers to keep in contact with exposed people, a way to provide new information to exposed people over time</p> <ul style="list-style-type: none"> ○ What it can tell us <ul style="list-style-type: none"> ▪ Describes how health effects that happen a long time after exposure occur ▪ What lifestyle factors or behaviors affect the development of health effects ○ What it does not tell us <ul style="list-style-type: none"> ▪ Whether the health effect is caused by exposure
Other public health actions	<ul style="list-style-type: none"> ○ Community surveys (not health related) <ul style="list-style-type: none"> ▪ Assess concerns, awareness, and what is needed ○ Health Education <ul style="list-style-type: none"> ▪ For the community ▪ For medical personal ○ Community Organization <ul style="list-style-type: none"> ▪ Develop community action board ▪ Improve communication between public health agencies and community ▪ Ensure community perspectives are heard and integrated into decision making



Cancer Incidence Among Residents of Census Tract 40, Dayton, Montgomery County, Ohio, 1996-2005



Chronic Disease and Behavioral Epidemiology Section, Ohio Department of Health

Holly L. Engelhardt, MS • Holly.Engelhardt@odh.ohio.gov • 614-466-5365

Robert W. Indian, MS • Robert.Indian@odh.ohio.gov • 614-644-7025

August 15, 2008

Why was this study conducted?

- Elevated levels of perchloroethylene (PCE), trichloroethylene (TCE) and chloroform, chemicals that may cause certain cancers (urinary tract, kidney, cervix, leukemia, liver, non-Hodgkin's lymphoma, multiple myeloma, Hodgkin's lymphoma and prostate), were detected in some resident homes near the Delphi Home Avenue facility.
- Residents are concerned the number of cancers in the area is higher than expected.

What were the objectives of the study?

- To determine the number of cancer cases diagnosed among residents of census tract (CT) 40 in Dayton, by cancer type, from 1996 to 2005.
- To compare the number of cases, by cancer type, to the number expected, based on national rates.
- To identify the most common cancers so appropriate community cancer programs can be developed.
- To make recommendations for further action, if necessary.

Who was included in the study?

- The study population was residents of CT 40, the area of Dayton with elevated PCE, TCE and chloroform.
- Cancer cases were identified through the Ohio Cancer Incidence Surveillance System.
- The study period 1996-2005 was chosen because these data are the most accurate and complete.

What are the results?

- 49 cancer cases were diagnosed among CT 40 residents during the 10-year study period.
- These 49 observed cancer cases include: 9 colon and rectum; 8 lung and bronchus; 7 female breast; and 25 other cancer types.
- Cases were more likely to be black (94%), 30 or older (100%) and current/former tobacco users (at least 63%).
- The number of cases was higher in 1996-2002 vs. 2003-2005, possibly due to lower reporting in recent years.

Is the number of cancer cases in CT 40 higher than what is expected?

- **No.** The observed number of cases in CT 40 was not significantly higher than expected for all cancer types combined or any specific type, including the types associated with PCE, TCE and chloroform.
- "Significantly higher" means the likelihood of observing this number of cancer cases in CT 40 is expected to occur by chance fewer than five times out of 100.

What are the risk factors for the common types of cancer?

- A risk factor is anything that increases the chance of developing a disease.
- Each cancer type has multiple risk factors, and these factors often interact to increase cancer risk.
- **Colon and rectum cancer:** Family history of colorectal cancer; familial adenomatous polyposis; hereditary nonpolyposis colorectal cancer; intestinal polyps; chronic inflammatory bowel disease; poor diet; lack of physical activity; obesity; heavy alcohol consumption; and smoking.
- **Lung and bronchus cancer:** Tobacco smoking (80-85% of cases); secondhand tobacco smoke; radon, arsenic and asbestos; air pollution; tuberculosis and pneumonia; and family history of lung cancer.
- **Breast cancer:** BRCA1/BRCA2 mutations; family history of breast, ovarian, cervical, uterine or colon cancer; previous breast cancer; chest radiation; early menstruation/late menopause; not having children; having first child after 30; hormone replacement therapy; overweight/obese; heavy alcohol consumption.

What can be concluded from this study?

- The causes of each case of cancer cannot be determined because data on the amount and duration of lifetime PCE, TCE and chloroform exposure and other cancer risk factors are not available.
- The cancer types associated with PCE, TCE and chloroform are NOT significantly higher than expected.
- Cigarette smoking is a major risk factor for two of the three common cancers (lung and bronchus; colorectal), and at least 63% of the cancer cases are current or former tobacco users.
- The cancer burden in CT 40 can be reduced through smoking cessation; eating a sensible diet; increasing physical activity; and following recommended cancer screening guidelines.



SOUTHWEST PRIORITY BOARD

c/o Department of Planning & Community Development
101 W. Third Street – Dayton, Ohio 45402
937.333.8262

Wilbur Heflin, Chairperson

September 25, 2008

Dear Mr. Case

Per our agreement, enclosed is the list of questions and roster of those in attendance at the meeting held on Wednesday, August 20, 2008 at the Ellison Senior Citizen Center.

The Southwest Priority Board would like to thank you and your colleagues for the briefing, the public meeting and the information that was shared, however, feedback that we have received since the meeting indicate some disappointment with the lack of discussion regarding what actions will be taken to address those situations where contamination was found or what additional responsibilities Delphi will take in the future.

It would be our hope that the regulatory agencies and Delphi would be willing to work with our community to achieve mutually agreed upon solutions to address those who have been impacted.

With rising health care costs and decreasing wages; several people in the neighborhood do not have access to adequate health care. We believe it is the responsibility of Delphi and the Public Health Agencies to provide protection for these residents. This neighborhood needs medical monitoring. According to the presentations that were given, this contamination issue was only recently discovered. There is rising concern that there may be more environmental issues to come.

We would appreciate receiving a response to the enclosed questions within the next 30 days of this letter. Once received, we would like to convene a meeting with you, Delphi representatives and citizen representatives to discuss next step options.

We want to thank you, in advance, for your attention to this matter and look forward to working with you to address our concerns.

Sincerely,

Wilbur Heflin, Chairperson Patricia Rickman, 1st Vice-Chairperson

Kaamil Slaughter, 2nd Vice-Chairperson

Emma Andrews, Treasurer

Minnie Holloway, Recording Secretary

William Bailey, Sgt-at-Arms

Ernest Chase, Historian

Dorothy Richardson, Corresponding Secretary

Dora Holmes, Chaplain

Members – Loretta Booker

Simenola Meriner

Ferman Merritt

Forest Booker

Southwest Priority Board

C: U. S. Senator Sherrod Brown,
U.S. Senator George Voinovich,
U.S. Representative Michael Turner,
U.S. Representative Jim Jordan,
U.S. Representative John Boehner,
U.S. Representative Jean Schmidt,
U. S. Representative David Hobson,
State Representative Clayton Luckie,
Mayor Rhine McLin,
City of Dayton Commissioners Dean Lovelace, Joey Williams, Matt Joseph,
Nan Whaley, City Manager Rashad Young

Delphi Questions

1. Should/Can you grow vegetables in the soil? What is the risk?
2. Will there be any testing of residents in the neighborhoods surrounding the Plant?
3. What type of tests should one have done to see if any of the chemicals found in the area are in their bodies and or are affecting their health?
4. What is being done to get permission from other property owners in the test area to have their properties tested? How was the test area determined?
5. Have Delphi employees been tested?
6. Will soil tests be available to all local residents outside of the CT 40?
7. What radius was affected?
8. What studies show that the chemicals (PCE, etc.) are destroyed and not just re-circulated in the community during mitigation efforts?
9. Was/Is there air contamination during the mitigations?
10. How does the intrusion vary from house to house without basements (slab style homes)?
11. What test can be done at the doctor's office to show whether you have been exposed to these chemicals (PCE. Etc.?)
12. Are these tests available to doctors/laboratories?
13. The Health Statistic Review doesn't tell us whether a health effect is caused by exposure, whether an exposure is associated with a health effect in the future, or whether a person will develop a health condition in the future. Is there any information/study that can?
14. If you knew of the contamination in 2005 why weren't we informed until 2007?
15. This toxic concern was present before 2003. Properties were bought and sold in 2003 and after without giving buyers disclosure of this spill. In view of this fact, what opportunities are there or will there be a requirement to have Delphi buy out residents due to the violation of full disclosure?
16. Whatever is determined that needs to happen, why do residents have to stay in the area? Can you relocate residents from the toxic environment?
17. If you have determined that someone has been contaminated from the exposure, what will Delphi do for those individuals who have contracted cancer from the exposure? Are you (Delphi) going to pay for their healthcare?....during their illness? What are the limitations?
18. There have been 3 other meetings of this kind. In each case, there has been no indication of what is going to be done for the residents in the area. Delphi needs to be held accountable for has happened. Can Delphi buy out residents as a result of the contamination/exposure? What other information can be shared to address the concerns of the residents?
19. *How closely does CT40 resemble the Delphi Study area?*
20. *Are there any precursors to the specific types of cancers caused by the chemicals of concern?*
21. *Since the liver is the primary target, are there ways to test that organ?*
22. *How does the vapor abatement system discharge affect the air quality?*
23. *What about the people who have moved from the area? Will they be located and tested?*
24. *What information can be shared regarding the Jackson School site? Some levels of contamination have been found and there have been reports of illnesses by people in that building.*

Kirkland, Randy

From: Renninger.Steven@epamail.epa.gov
Sent: Tuesday, September 30, 2008 1:31 PM
To: Kirkland, Randy
Subject: Fw: Southwest Letter - follow-up August 20, 2008 mtg.
Attachments: pic08324.jpg; Delphi letter-foloup ltr-9-18-08.doc; Dephi Questions.doc; Delphi mtg Sign-in sheet.doc

Randy: Please print the attached email and files for the Delphi Site file.

Thanks.

Steve Renninger, On-Scene Coordinator
U.S. EPA Region V
Emergency Response Branch
26 West Martin Luther King Drive (G41)
Cincinnati, OH 45268
Phone: 513-569-7539
Fax: 513-487-2102
Cell: 513-260-7849
email: renninger.steven@epa.gov

----- Forwarded by Steven Renninger/CI/USEPA/US on 09/30/2008 01:29 PM

"Case, Mark"
<MCase@phdmc.org>
>

09/30/2008 10:29
AM

To
Steven Renninger/CI/USEPA/US@EPA,
"Bob Frey"
<Bob.Frey@odh.ohio.gov>, "Greg
Stein" <Greg.Stein@odh.ohio.gov>,
"Holly Engelhardt"
<Holly.Engelhardt@odh.ohio.gov>,
"Hut, Tom" <THut@phdmc.org>

cc

Subject
FW: Southwest Letter - follow-up
August 20, 2008 mtg.

Lady & Gentlemen:

First of all, I'd like to say congratulations to Holly! And welcome back. I apologize that I can't locate the email that contains your new last name but once I find it, I'll certainly change my information.

Recall that at each of the public meetings held in August we invited the community to write down their questions and turn them in for a written response. We are closing in on completing our response to the questions submitted from the Behr meeting but until now have not received any submission from the Delphi meeting. Priority Board representatives told me on the night of the meeting that they would go through the questions turned in during their meeting, put them in some order, and forward them to me. I called about a week later and requested the questions and was told they would be forwarded as soon as they were able to do so.

Yesterday afternoon I received the attached information / questions from the Priority Board for response. Note that the information was shared with Steve Bennish of the Dayton Daily News, members of the Dayton City Commission, an Ohio House member (who attended the meeting) and members of Congress (who should be working to solve the budget / credit crisis).

After we all have a chance to look this over, we should discuss.

Mark,

Mark Case, Director
Division of Environmental Health
(937) 225-4429

(Embedded image moved to file: pic08324.jpg)clip_image002

From: Marcellus, Ken [mailto:Ken.Marcellus@cityofdayton.org]
Sent: Monday, September 29, 2008 2:50 PM
To: Case, Mark
Cc: Bethany Dale; Dillon, Bobbi; Walker, Ariel; Long, Cynthia; grannypray4me@sbcglobal.net; columbuscotton@yahoo.com; pjstark@mactec.com; sbennish@daytondailynews.com
Subject: Southwest Letter - follow-up August 20, 2008 mtg.

Attached you will find a letter, sign-in sheet, and questions that were promised from the August 20, 2008 Meeting at Ellison Center. A signed version is in the mail to you for your records. I am sending this to you due to a timely matter outlined in the letter. . <<Delphi letter-foloup ltr-9-18-08.doc>> <<Dephi Questions.doc>> <<Delphi mtg Sign-in sheet.doc>>

Let me know if you need any additional information (See attached file: Delphi letter-foloup ltr-9-18-08.doc)(See attached file: Dephi Questions.doc)(See attached file: Delphi mtg Sign-in sheet.doc)